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Research Article

Prevalence and clinical characteristics of headache in dental students of a tertiary care teaching dental hospital in Northern India

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ABSTRACT

Background: Chronic headache is as much as a problem in India as elsewhere in the world with a rising trend in young adults which negatively affects the quality of life of the affected person. In current scenario of increasing prevalence of headache in students, most of them have been found to practice self medication leading to inappropriate management and sometimes analgesic overuse causing treatment refractoriness.

Methods: A questionnaire based survey was done on undergraduate dental students at a tertiary care dental teaching hospital in Northern India. Severity of headache was assessed by Numeric Rating Scale. Data collected was analyzed to assess the prevalence, pattern & triggering factors of headache along with awareness of dental students regarding treatment. Prevalence and characteristics of migraine were also assessed along with the therapeutic strategies opted by students.

Results: Our study (n=186) demonstrated headache prevalence of 63.9% which was higher in females (74.3%) as compared to males (32.6%). Headache experienced by majority of student population was bilateral (36.13%), sharp stabbing (38.65%) and of moderate intensity (57.98%). Common associated symptoms were nausea/ vomiting (24.36%) and scalp tenderness (22.68%). Stress (82.3%) &irregular sleep (81.5%) were the most common triggering factors. Prevalence of migraine was 13.44% with female preponderance (87.5%). Practice of self medication was reported by 88.2% of students. Most commonly used drugs were paracetamol (36.76%), aspirin (26.47%) and combination of ibuprofen and paracetamol (25%). Specific medication use in migraineurs was found to be low (25%) showing inadequate management of migraine headache in our study population.

Conclusions: The results in this study demonstrate high headache prevalence in dental students with self medication being practiced by the majority.

Keywords: Headache, Migraine, Prevalence

INTRODUCTION

Headache is a very common health problem in today's scenario among each age group with an increasing trend in young adults which negatively affects the quality of life of the affected person by causing impairment in routine activities.[1] Recurrent headache is a risk factor for future chronic headache and other pain syndromes.[2] Migraine is the main reason of headache worldwide.[3] A meta analysis of studies on prevalence of migraine has demonstrated global prevalence among adults of 10%.[4] Recent epidemiological surveys have demonstrated a significant number of Asian population, though less as compared to western countries, being afflicted with migraine, due to racial or geographical variations.[5] Migraine has been ranked one of the most debilitating diseases with a disability score of 0.7 by World Health Organisation (WHO).[6] Rising issue of increasing headache has been witnessed in medical students by many studies. Recurrent headache was found to have direct impact on academic performance of students in health profession raising an alarm for their awareness and encouragement for adequate management.

In current scenario of increasing prevalence of headache, most of the students have been found to practice self medication leading to inappropriate management and sometimes analgesic overuse causing treatment refractoriness.[6]

Various studies have been done worldwide on general population, children, adolescents and selectively medical students to assess the prevalence and pattern of headache. Some Indian studies also determined the headache prevalence in general population and the adolescents but studies including students in health profession are lacking. Hence our study is to explore epidemiology of headache in dental students in a tertiary care teaching dental hospital in Northern India by determining prevalence, pattern and therapeutic options seeking behaviour of students so that adequate steps to be taken to prevent as well as adequately treat this ailment in efficient population group of our society.

METHODS

We developed a structured questionnaire to gather information on 1 year prevalence of recurrent headache, clinical characteristics, associated factors and the triggering factors along with the mode of treatment adopted by dental undergraduate students of a tertiary care teaching hospital in Northern India. Language of questionnaire was made simple and easily understandable to students. We distributed the questionnaires through class representatives to second, third and fourth years of dental students. Students were assured of confidentiality and the participation was entirely voluntary.

Severity of headache was assessed by Numeric Rating Scale (NRS). Headache was graded as mild, moderate and severe as per the numerical value marked from 0-10 on NRS by each participant.[7] Migraineurs were diagnosed as per International Headache Society (IHS) classification.[8] Data collected was analyzed to assess the prevalence, pattern, frequency, duration & triggering factors of headache along with awareness and management by dental students.

RESULTS

Total of 300 structured questionnaires were distributed to second, third and fourth years of undergraduate dental students in our tertiary care dental college with 100 students per batch. Only 186 students returned the filled proforma giving a participation of 62%. So final analysis was done on information provided by those 186students (46 males and 140 females) aged 18-24 years.

Out of 186 enrolled students, 119(63.9%) students were found to experience frequent headaches during last one year. Demographic details showed that 46(38.6%) students were non vegetarians, 114(95.7%) were non alcoholics and 117(98.3%) were non smokers. Headache was significantly more common in females 104(74.3%) as compared to males 15(32.6%).

Headache characteristics

Headache experienced by majority of student population was bilateral (36.13 %), sharp stabbing (38.65%) and of moderate intensity (57.98%). Most of the students experienced 1-4 attacks in a month (52.94%), of <4 hour duration (76.47%) and impairment in routine activities (38.65%) (Table 1).

Table 1: Headache characteristics of dental students.

Characteristics	Number of Students (%), N=119
Headache side	
• Unilateral	43 (36.13%)
• Bilateral	35 (29.41%)
• Frontal	41 (34.45%)
Quality	
• Pulsatile	29 (24.36%)
• Dull pressing	44 (36.97%)
• Sharp stabbing	46 (38.65%)
Headache intensity	
• Mild	30 (25.21%)
• Moderate	69 (57.98%)
• Severe	20 (16.80%)
Duration	
• <4 hours	91 (76.47%)
• >4 hours	28 (23.52%)
Impairment of routine activities	
• Complete	2 (1.68%)
• Incomplete	44 (36.97%)
• No impairment	73 (61.34%)
Family history	
• Yes	24 (20.16%)
• No	95 (79.83%)

Associated symptoms and triggering factors

119 students experienced 146 associated symptoms. Common associated symptoms were nausea/ vomiting [n=29, 24.36%] and scalp tenderness [n=27, 22.68%] followed by alteration in consciousness, vertigo, photophobia, phonophobia, diplopia, seizures, diarrhoea and paraesthesia (Figure 1).

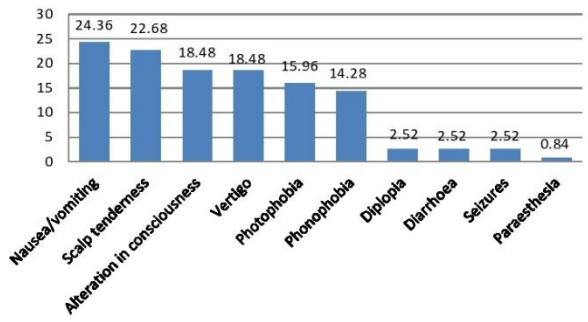

Figure 1: Associated symptoms with headache (in %).

119 students expressed 481 triggering factors for causation of headache. All the students reported multiple triggering factors for headache. Stress [n=98, 82.35%] & irregular sleep [n=97, 81.51%] were found to be the most common triggering factors followed by exertion, hunger,

flashing lights, weather changes, specific smell, menstruation and specific food (Figure 2). Family history of similar headache was present in 24 (20.16%) students. Only 1 student had relevant past history of benign brain tumor since 5 years.

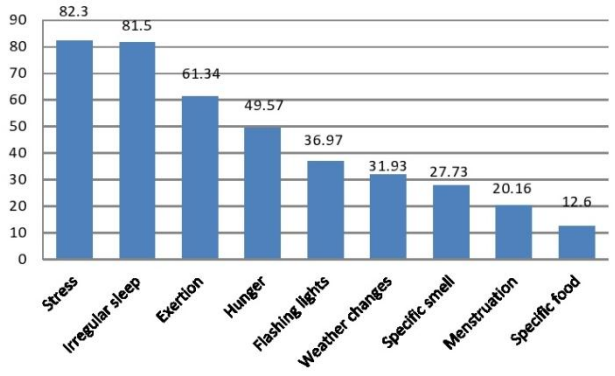

Figure 2: Triggering factors for headache (in %).

Prevalence and characteristics of migraine

Out of 119 students with recurrent headache, 16 (13.44%) were diagnosed with migraine according to the classification given by IHS. Prevalence in females was 87.5% where as in males was 12.5%. Among majority of migraineurs, headache was unilateral (87.5%) and pulsatile (62.5%) in nature. Headache was moderate to severe intensity according to NRS in 56.25% and 43.75% respectively. Majority of students with migraine (87.5%) experienced 1-4 attacks per month with impairment of routine activity in 81.25% students. Nausea/vomiting (81.25%) followed by photophobia/ phonophobia (75%) were the common associated symptoms with headache in students diagnosed with migraine. Major trigger for headache as experienced by students was stress (81.25%) followed by irregular sleep, exertion and flashing lights. Family history of similar headache was present in 6 students (37.5%) with migraine.

Medication history

68 students (57.14%) presented with the history of drug intake for treating headache. 88.2% students took non prescription drugs for management of headache without the consultation by doctor. 75% of students diagnosed with migraine had positive drug history with only 4 (25%) students taking specific drugs for migraine.

Medications used were analgesics (100%) and anti emetics (4.41%). Paracetamol alone was the most commonly used analgesic in 25 (36.76%) students followed by aspirin in 18 (26.47%), combination of paracetamol and ibuprofen in 17 (25%), diclofenac in 5 (7.35%) and combination of paracetamol and propiphenazone in 4(5.88%) students. Other drugs used were ibuprofen, mefenamic acid, nimesulide, metimazol, and combination of aspirin and caffeine by one patient each. 3 students (4.41%) students took specific anti migraine ergot preparation- migranil (combination of ergotamine, caffeine, paracetamol & belladonna) and 1 (1.47%) student took flunarizine. 2 students (2.94%) reported use of homeopathic medicine for treating headache. Domperidone was the only anti emetic used by 3 (4.41%) students (Table 2, Figure 3). Out of 68 students taking medication 64 (94.11%) had complete relief.

Table 2: Drug option characteristics of dental students.

Drug	Number of Students (%), N=68
Paracetamol	25 (36.76%)
Aspirin	18 (26.47%)
Paracetamol+Ibuprofen	17 (25%)
Diclofenac	5 (7.35%)
Paracetamol+Propiphenazone	4 (5.88%)
Migranil	3 (4.41%)
Others	8 (11.76%)

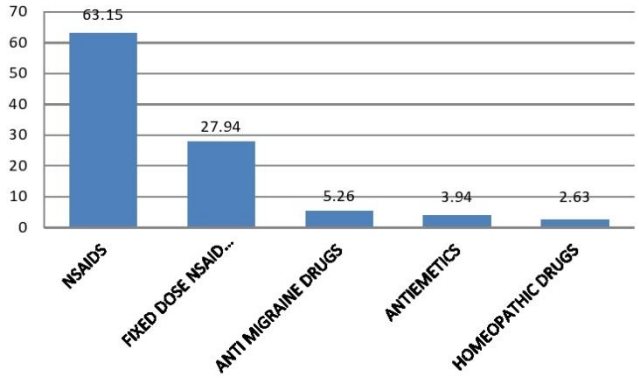

Figure 3: Drugs used by students (in %).

DISCUSSION

Our study results showed high prevalence (63.9%) of recurrent headache among dental students in accordance with previous studies done on medical students demonstrating high prevalence of headache ranging from 39% to 96%.[9-16] Headache prevalence in females was two times higher as compared to males in present study as already demonstrated in previous studies. 'Ojini et al' study reported similar ratio as our study demonstrating prevalence in females as 62.8% and males as 34.1 %.[1]

Considerably high rate of prevalence of migraine (13.44%) has been observed in our study as compared to 'Shahrakai' (7.14%), 'Ojini' (6.4%) and 'Mitsikosta' (2.4%) studies.[1,13,17] A Brazilian study reported higher migraine prevalence of 40.2%. Another study by 'Amayo' demonstrated prevalence of migraine in 33.8% of medical students.[9] Difference in the prevalence can be attributed to racial, environmental, nutritional, psychological and social factors of particular population contributing to headache.

In our study, prevalence of migraine was found to be 7 times higher in females as compared to male counterparts reflecting female preponderance which has been observed in other studies too. [1, 9, 12, 18-20]

Positive family history was present in one fifth of the students having recurrent headache in concordance with a 'Nigerian study'[1] which demonstrated positive family history in 22% students, whereas results of 'Oman study' reflected more strong correlation with 58%studnets having positive family history.[11] Half of the migraineurs reported positive family history in our study demonstrating strong impact of genetics in causation of migraine.

Nausea/vomiting and scalp tenderness were the most common associated symptoms observed in students with recurrent headache where as migraineurs complained of photophobia/phonophobia along with nausea / vomiting, which are already documented associated symptoms confirming the diagnosis of migraine. Most common triggering factors for headache were stress and irregular sleep. Being in medical profession these students are more vulnerable to these two triggers due to strong academic environment and the professional responsibilities.

Very high percentage (88.2%) of students was reported to take over the counter drugs without the consultation by doctor in our study. Similar kind of behaviour has been observed in other studies with percentage of students taking self medication ranging from 56 to 83%.[1,10-12,14,15] This can be reasonably explained by the fact that being in medical profession, students possess theoretical knowledge about the drugs .Hence they prefer to seek self medication using over the counter drugs. Most of the drugs used were simple analgesics. Specific drugs for treatment of migraine were only taken by 1/4th of migraineurs showing inadequate management of migraine because of lack of physician consultation. Hence taking into consideration high rate of self medication by students, there seems to be a dire need to promote student awareness and encourage consultation by medical expertise so as to appropriately treat this ailment.

CONCLUSION

Results of this study showed high prevalence of recurrent headache along with migraine contributing to impairment of routine activities in majority of students. A large majority of students take self medication and rely on simple analgesics for treating headache. Accurate early diagnosis of headache & adequate management which may seem easy but is rather difficult can be beneficial for students to increase their academic performance.

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